

INRIS  
PR SUMMARY REPORT

(b) (6) 15/00

04 JAN-2000  
00PR04640-00

PR Number: 00PR04640-00

Previous PR Number: 99PR03209-00

Title: Appearance-based Vision for Complex Systems

Award Number: N000149510521  
Modification Number: P00008

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND AT COLLEGE PARK  
2100 LEE BUILDING  
COLLEGE PARK, MD 207425141

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Gilmore Jeff  
Grants Officer:

P.O. Phone: (703) 696-4323  
Phone: (310) 647-4836

Current Award Start Date: 01-MAR-95  
Current Award End Date: 31-MAY-00  
P.O. Requested Start Date: 01-FEB-00  
P.O. Requested End Date: 31-MAY-00

PR Type: Option JF

Internal Coordinator(s):

Phone:

Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Current Funding:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT	
AL	9700400	WBBB	000	RA	36	9	068342	2D	000000	R1103 000	URIC	\$287,000.00
FRC: URIC Expiration: 30-SEP-00												
AM	9700400	WBBB	000	RA	36	9	068342	2D	000000	R1103 000	URIQ	\$288,000.00
FRC: URIQ Expiration: 30-SEP-00												

Future Funding:

FY	FRC	NEG	START DATE	AMOUNT
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PR Status: Approved (Active)

Equipment Cost (Current Year): \$ .00

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**INRIS  
PR SUMMARY REPORT**

C  
**SCOTTL / PRODUCT  
04-JAN-2000  
00PR04640-00**

<b>Cumulative Total Award Value:</b>	<b>\$ 5,750,000.00</b>
<b>Total Value of PR:</b>	<b>\$ 575,000.00</b>
<b>Increment Value:</b>	<b>\$ 575,000.00</b>
<b>Modification Negotiated Value:</b>	<b>\$ 5,801,580.24</b>

**Short Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

**BPS: Submission, Evaluation, Cost**

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement. Financial Considerations: Labor - The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project. The proposed labor rates are in line with standard academic or industrial practice for research of this type. Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

**BPS: Submission, Evaluation, Cost**

Other Direct Costs- Other proposed direct costs (such as supplies, equipment, ADP, travel, etc.) are reasonable and necessary for accomplishing the research project. I have reviewed and accepted the proposed budget subject to the grant/contracting officer's verification of rates in indirect costs. Where changes to the original budget were necessary I have had the principal investigator submit a revised budget through official university channels and that revised budget is enclosed. The proposal appears to be fair, reasonable, in the interest of the government, and is consistent with other previous and current efforts of this nature.

**Extended Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

INRIS  
PR SUMMARY REPORT

SCOTTL / PRODUCT  
04-JAN-2000  
00PR04640-00

INRIS  
PR SUMMARY REPORT

(b) (6) / 8

SCOTT / PRODUCT  
08-DEC-1998  
99PR03209-00

PR Number: 99PR03209-00

Previous PR Number: 98PR02995-02

Title: Appearance-based Vision for Complex Systems

Award Number: N000149510521  
Modification Number: P00007

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND AT COLLEGE PARK  
2100 LEE BUILDING  
COLLEGE PARK, MD 207425141

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Chalmers S.  
Grants Officer:

P.O. Phone: (703) 696-4323  
Phone: () 175-

Current Award Start Date: 01-MAR-95  
Current Award End Date: 28-FEB-99  
P.O. Requested Start Date: 15-DEC-98  
P.O. Requested End Date: 31-MAY-00

PR Type: Option

Internal Coordinator(s):

Phone:

Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Current Funding:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AJ 9790400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIQ	\$575,000.00
FRC: URIQ Expiration: 30-SEP-99											
AK 9790400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIC	\$575,000.00
FRC: URIC Expiration: 30-SEP-99											

Future Funding:

FY	FRC	NEG	START DATE	AMOUNT
2000			30-NOV-99	\$ 575,000.00

PR Status: Approved (Active)

Equipment Cost (Current Year): \$ .00

INRIS  
PR SUMMARY REPORT

SCOTT / PRODUCT  
08-DEC-1998  
99PR03209-00

Cumulative Total Award Value:	\$ 5,750,000.00
Total Value of PR:	\$ 1,150,000.00
Increment Value:	\$ 1,150,000.00
Modification Negotiated Value:	\$ 5,674,709.00

**Short Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

**BPS: Submission, Evaluation, Cost**

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**Comments**

This is a MURI award.

**Extended Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

**INRIS  
PR SUMMARY REPORT**

SCOTTL / PRODUCT  
08-DEC-1998  
99PR03209-00

## **Marshall, Sharon**

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**From:** Hawkins, Harold  
**Sent:** Thursday, April 30, 1998 9:00 AM  
**To:** Marshall, Sharon  
**Subject:** RE: Extending period of performance for N00014-95-1-0521

Sharon: The answer to both questions is yes. Harold Hawkins

*Harold Hawkins, Ph.D*  
*Office of Naval Research*  
*800 N. Quincy Street*  
*Arlington, VA 22217*  
*Tel #: 703-696-4323*  
*Fax #: 703-696-1212*  
*email: hawkinh@onr.navy.mil*

-----Original Message-----

**From:** Marshall, Sharon  
**Sent:** Thursday, April 30, 1998 8:21 AM  
**To:** Hawkins, Harold  
**Cc:** Marshall, Sharon  
**Subject:** FW: Extending period of performance for N00014-95-1-0521

SECOND REQUEST. PLEASE RESPOND ASAP FOR PROCESSING. THANKS IN ADVANCE. SHARON

*Sharon L. Marshall*  
*@NRC 254*  
*(703) 696-2607*  
*e-mail address: marshasl@onr.navy.mil*

-----Original Message-----

**From:** Marshall, Sharon  
**Sent:** Tuesday, April 28, 1998 2:57 PM  
**To:** Hawkins, Harold  
**Cc:** Marshall, Sharon  
**Subject:** RE: Extending period of performance for N00014-95-1-0521

Harold,

I have a couple of questions.

1. Do you want the final period of performance to read 5/31/00, which would be the second year option?
2. Modification P00005 exercised option 1 to go through 28 FEB 1999, did you want this date revised also to read 5/31/99?

I want to make sure I am making the correct changes that you indicate to me. Thanks in advance, Sharon

Please return e-mail message ASAP.

Sharon

*Sharon L. Marshall*  
*@NRC 254*  
*(703) 696-2607*  
*e-mail address: marshasl@onr.navy.mil*

-----Original Message-----

**From:** Hawkins, Harold  
**Sent:** Friday, April 24, 1998 11:29 AM  
**To:** Marshall, Sharon  
**Cc:** Hawkins, Harold; 'ar'  
**Subject:** Extending period of performance for N00014-95-1-0521

Sharon: Please change the period of performance for the subject contract so that the end date is 5/31/00 rather than the current 2/28/00. This modification is needed to accommodate a change in funding rate initiated by our MURI office to make it consistent with documented expenditure rates.  
Thanks for your help in this.

Azriel: please acknowledge receipt of a copy of this note.

Harold Hawkins, Program Officer



## Marshall, Sharon

**From:** Hawkins, Harold  
**Sent:** Friday, April 24, 1998 11:29 AM  
**To:** Marshall, Sharon  
**Cc:** Hawkins, Harold; 'ar'  
**Subject:** Extending period of performance for N00014-95-1-0521

Sharon: Please change the period of performance for the subject contract so that the end date is 5/31/00 rather than the current 2/28/00. This modification is needed to accomodate a change in funding rate initiated by our MURI office to make it consistent with documented expenditure rates.  
Thanks for your help in this.

Azriel: please acknowledge receipt of a copy of this note.

Harold Hawkins, Program Officer 696-4323

*Need clarification on period of performance  
Per e-mail message 4/28/98*

(b) (6)

INRIS  
PR SUMMARY REPORT

SCOTT / PRODUCT  
19-DEC-1997  
98PR02995-01

PR Number: 98PR02995-01

Previous PR Number: 98PR02995-00

Title: Appearance-based Vision for Complex Systems

Award Number: N000149510521  
Modification Number: P00005

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Dotu Eleanor  
Grants Officer: Sharon Marshall

P.O. Phone: (703) 696-4323  
Phone: (415) 812-4035

Current Award Start Date: 01-MAR-95  
Current Award End Date: 31-MAY-98  
P.O. Requested Start Date: 01-JAN-98  
P.O. Requested End Date: 31-MAY-00

PR Type: Incremental Funding

Internal Coordinator(s):

Phone:

Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Current Funding:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AG 9780400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIC	\$288,000.00
FRC: URIC Expiration: 30-SEP-98											
AH 9780400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIQ	\$287,000.00
FRC: URIQ Expiration: 30-SEP-98											

Future Funding:

FY	FRC	NEG	START DATE	AMOUNT
2000				\$ 0.00

PR Status: Approved (Active)

Equipment Cost (Current Year): \$ .00

INRIS  
PR SUMMARY REPORT

SCOTTL / PRODUCT  
19-DEC-1997  
98PR02995-01

Cumulative Total Award Value:	\$ 4,600,000.00
Total Value of PR:	\$ 575,000.00
Increment Value:	\$ 575,000.00
Modification Negotiated Value:	\$ 1,980,881.00

**Short Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

**BPS: Submission, Evaluation, Cost**

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement. Financial Considerations: Labor - The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project. The proposed labor rates are in line with standard academic or industrial practice for research of this type. Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

**BPS: Submission, Evaluation, Cost**

Other Direct Costs- Other proposed direct costs (such as supplies, equipment, ADP, travel, etc.) are reasonable and necessary for accomplishing the research project. I have reviewed and accepted the proposed budget subject to the grant/contracting officer's verification of rates in indirect costs. Where changes to the original budget were necessary I have had the principal investigator submit a revised budget through official university channels and that revised budget is enclosed. The proposal appears to be fair, reasonable, in the interest of the government, and is consistent with other previous and current efforts of this nature.

**Extended Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

INRIS  
PR SUMMARY REPORT

SCOTTL / PRODUCT  
19-DEC-1997  
98PR02995-01

INRIS  
PR SUMMARY REPORT

SCOTTL / PRODUCT  
21-NOV-1997  
98PR02995-00

PR Number: 98PR02995-00

Previous PR Number: 97PR04870-00

Title: Appearance-based Vision for Complex Systems

Award Number: N000149510521  
Modification Number: P00004

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

P.O. Name: Harold Hawkins

P.O. Code: 342PS

P.O. Phone: (703) 696-4323

Point of Contact: Chanley Kim

Phone: (619) 594-2511

Grants Officer: Sharon Marshall

Current Award Start Date: 01-MAR-95

Current Award End Date: 31-MAY-98

P.O. Requested Start Date: 01-DEC-97

P.O. Requested End Date: 31-MAY-98

PR Type: Incremental Funding

Internal Coordinator(s):

Phone:

Instrument Type: Grant

Basis For Selection: (rfp)

CBD Date:

Current Funding:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AG 9780400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIC	\$287,000.00
FRC: URIC Expiration: 30-SEP-98											
AH 9780400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIQ	\$288,000.00
FRC: URIQ Expiration: 30-SEP-98											

Future Funding:

FY	FRC	NEG	START DATE	AMOUNT
<del>2000</del>				<del>\$ 575,000.00</del>
<del>1999</del>				<del>\$ 575,000.00</del>

PR Status: Approved (Active)

Equipment Cost (Current Year): \$ .00

INRIS  
PR SUMMARY REPORT

SCOTTL / PRODUCT  
21-NOV-1997  
98PR02995-00

Cumulative Total Award Value:	\$ 4,600,000.00
Total Value of PR:	\$ 575,000.00
Increment Value:	\$ 575,000.00
Modification Negotiated Value:	\$ 8,661,026.00

**Short Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

**BPS: Submission, Evaluation, Cost**

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement. Financial Considerations: Labor - The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project. The proposed labor rates are in line with standard academic or industrial practice for research of this type. Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

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**Comments**

This is a FY94 MURI.

**Extended Work Statement**

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

**INRIS  
PR SUMMARY REPORT**

SCOTTL / PRODUCT  
21-NOV-1997  
98PR02995-00

INRIS  
PR SUMMARY REPORT

WESTONA / PRODUCT  
18-FEB-1997  
97PR04870-00

PR Number: 97PR04870-00

Previous PR Number: 96PR05199-01

Title: Appearance-based Vision for Complex Systems

Award Number: N000149510521  
Modification Number: P00003

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Snyderman Ralph

P.O. Phone: (703) 696-4323  
Phone: (919) 684-6278

Current Award Start Date: 01-MAR-95  
Current Award End Date: 28-FEB-98  
P.O. Requested Start Date: 01-MAR-97  
P.O. Requested End Date: 28-FEB-00

PR Type: Incremental Funding

Internal Coordinator(s):  
Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Phone:

Current Funding:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AE 9770400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIC	\$288,000.00
FRC: URIC Expiration: 30-SEP-98											
AF 9770400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIQ	\$287,000.00
FRC: URIQ Expiration: 30-SEP-98											

Future Funding:

FY	FRC	NEG	START DATE	AMOUNT
1998			<del>01-AUG-95</del> 01-OCT-97	<del>\$ 1,150,000.00</del> 575,000

PR Status: Approved (Active)

Equipment Cost (Current Year): \$ .00



INRIS  
PR SUMMARY REPORT

WESTONA / PRODUCT  
18-FEB-1997  
97PR04870-00

Cumulative Total Award Value:	\$ 4,025,000.00
Total Value of PR:	\$ 575,000.00
Increment Value:	\$ 575,000.00
Modification Negotiated Value:	\$ 0.00

Notes to Acquisition

This is a MURI jointly funded by ONR and DARPA.

Short Work Statement

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

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BPS: Overall Merits

This effort will increase our understanding of the mechanisms of scene analysis and object recognition in biological vision.

BPS: ONR Mission

If successful, this effort will improve the Navy's capabilities in automatic target recognition and the visual control of robotic systems.

BPS: Contractor Qualifications

The proposed contractor provides the unique capabilities and experience of the principal investigator as described in the research proposal. The principal investigator would not be available through any other contractor.

BPS: PI Qualifications

The principal investigator is highly qualified to execute the proposed program based on previous experience, publications, and presentations as described in the proposal.

Extended Work Statement

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

INRIS  
PR SUMMARY REPORT

COMSTOT / PRODUCT  
07-MAR-1996  
96PR05199-00

PR Number: 96PR05199-00

Previous PR Number: 96PR05199-01

Title: Appearance-based Vision for Complex Systems

(b) (6)

Award Number: N000149510521  
Modification Number: P00002

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Seligman Stephanie

P.O. Phone: (703) 696-4323  
Phone: (301) 443-6170

Current Award Start Date: 01-MAR-95  
Current Award End Date: 28-FEB-98  
P.O. Requested Start Date: 01-MAR-96  
P.O. Requested End Date: 31-DEC-96

PR Type: Incremental Funding

Internal Coordinator:

Phone:

Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Funding Information:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AB	9760400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000	URIQ \$575,000.00
FRC: URIQ Expiration: 30-SEP-96											

Equipment Cost (Current Year): \$ .00

Cumulative Total Award Value: \$ 2,300,000.00  
Total Value of PR: \$ 575,000.00  
Increment Value: \$ 575,000.00  
Modification Negotiated Value: \$15,484,028.00  
Future Funding: \$ 0.00

Short Work Statement

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BPS: ONR Mission

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Extended Work Statement

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INRIS  
PR SUMMARY REPORT

COMSTOT / PRODUCT  
07-MAR-1996  
96PR05199-01

PR Number: 96PR05199-01

Previous PR Number: 96PR05199-00

Title: Appearance-based Vision for Complex Systems

(b) (6)

Award Number: N000149510521  
Modification Number: P00003

Short Contractor Code: mryc  
Size and Type of Business: 1s  
Nonprofit-Educ./Not Historically  
Black/State Controlled

P.I. Name: Azriel Rosenfeld  
Performer: UNIVERSITY OF MARYLAND  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

P.O. Name: Harold Hawkins  
P.O. Code: 342PS  
Point of Contact: Seligman Stephanie

P.O. Phone: (703) 696-4323  
Phone: (301) 443-6170

Current Award Start Date: 01-MAR-95  
Current Award End Date: 28-FEB-98  
P.O. Requested Start Date: 01-MAR-96  
P.O. Requested End Date: 31-DEC-96

PR Type: Incremental Funding

Internal Coordinator:

Phone:

Instrument Type: Grant  
Basis For Selection: (rfp)  
CBD Date:

Funding Information:

ACRN	APPN	SBHD	OBJ	RM	BCN	SA	AAA	TT	PAA	COST CODE	AMOUNT
AC	9760400	WBBB	000	RA	35	3	068342	2D	000000	R1103 000URIC	\$575,000.00
FRC: URIC Expiration: 30-SEP-96											

Equipment Cost (Current Year):	\$	.00
Cumulative Total Award Value:	\$	2,300,000.00
Total Value of PR:	\$	575,000.00
Increment Value:	\$	575,000.00
Modification Negotiated Value:	\$	15,484,028.00
Future Funding:	\$	0.00

Short Work Statement

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

BPS: Submission, Evaluation, Cost

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement. Financial Considerations: Labor - The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project. The proposed labor rates are in line with standard academic or industrial practice for research of this type. Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

BPS: Submission, Evaluation, Cost

Other Direct Costs- Other proposed direct costs (such as supplies, equipment, ADP, travel, etc.) are reasonable and necessary for accomplishing the research project. I have reviewed and accepted the proposed budget subject to the grant/contracting officer's verification of rates in indirect costs. Where changes to the original budget were necessary I have had the principal investigator submit a revised budget through official university channels and that revised budget is enclosed. The proposal appears to be fair, reasonable, in the interest of the government, and is consistent with other previous and current efforts of this nature.

BPS: Overall Merits

This effort will increase our understanding of the mechanisms of scene analysis and object recognition in biological vision.

BPS: ONR Mission

If successful, this effort will improve the Navy's capabilities in automatic target recognition and the visual control of robotic systems.

BPS: Contractor Qualifications

The proposed contractor provides the unique capabilities and experience of the principal investigator as described in the research proposal. The principal investigator would not be available through any other contractor.

BPS: PI Qualifications

The principal investigator is highly qualified to execute the proposed program based on previous experience, publications, and presentations as described in the proposal.

Extended Work Statement

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.



This grant expires by: 26 30 95 !!

R & T PROJECT CODE 4203010---02 PREV R & T PROJECT CODE 4203010---01  
PR SUBMISSION DATE 24 MAY 1995 DATE CONTRACT RECORD WRITTEN 24 MAY 1995  
CONTRACT NUMBER N000149510521 CONTRACT MOD NUMBER 000001  
START DATE OF CURRENT CONTRACT 01 MAR 1995 END DATE 28 FEB 1998  
REQUESTED START DATE 01 JUL 1995 END DATE 28 FEB 1998  
NEGOTIATED START DATE 01 JUL 1995

CONTRACTOR NAME UNIVERSITY OF MARYLAND  
SHORT CONTRACTOR CODE mryc SIZE AND TYPE BUSINESS CODE 1s  
CONTRACTOR STREET COLLEGE PARK CAMPUS  
CONTRACTOR CITY COLLEGE PARK  
CONTRACTOR STATE MD CONTRACTOR ZIP CODE 20742  
REP PH

PR TYPE CODE (1) if INSTRUMENT TYPE CODE grt  
(2) BASIS FOR SELECTION sol  
(3) EQUIPMENT TITLE con

BRANCH HEAD APPROVAL OF SOURCE JUST./RFP DATE  
BRANCH HEAD COMMENTS ON SOURCE JUSTIFICATIONS 5/26/95

SECTION LEADER USERID SECTION LEADER CODE  
SECTION LEADER NAME  
DATE SECTION LEADER ASSIGNED ASSIGN WEIGHT

NEGOTIATOR USERID  
NEGOTIATOR NAME  
DATE NEGOTIATOR ASSIGNED  
PREVIOUS NEGOTIATOR NAME Coleman  
PCO USERID NAME  
S.O. NAME Hawkins  
S.O. USERID harold4  
(b) (6)  
NEGOTIATOR CODE  
, Curtissa ,L  
CODE  
, Harold ,L  
S.O. CODE 342

TOTAL CUMULATIVE VALUE OF CURRENT CONTRACT 4025000.00 3450,000  
TOTAL OBLIGATED FUNDING ON CURRENT CONTRACT 575000.00  
PREV NEG INCREMENTAL FUNDS PROVIDED BY THIS PR 575000.00  
NEW FUNDS BEING NEGOTIATED INTO CURRENT CONTRACT 0.00  
CURRENTLY NEGOTIATED NEW FUNDS PROVIDED BY THIS PR 0.00  
TOTAL EXPECTED TO BE OBLIGATED ON FUTURE ACTIONS 2875000.00 230000

FRC	PROGRAM	YEAR	FUNDS	INCREMENT	FS	DUE DATE	ACRN	CSS FUNDS
a344		1994		575000.00	a	01 JUL 1995	AB	0.00
uric		1995		575000.00		01 DEC 1995		0.00
uric		1996		575000.00		01 MAR 1996		0.00
				575000.00		01 DEC 1996		0.00
				1150000.00		01 MAR 1997		0.00
				0.00				0.00
				0.00				0.00
				0.00				0.00
				0.00				0.00
				0.00				0.00

1498 TITLE (u) Appearance-based Vision for Complex  
Systems

REPORTS FREQUENCY CODE sem

PI NAME Azriel Rosenfeld  
PI TELEPHONE (301) 405 4526 EXT

CONTRACT PROPOSAL/REQUISITION NUMBER

ONR PROPSOAL NUMBER

PATENTS INTEREST CODE

CLASSIFICATION DD 254

DATE OF DD 254

Notes to 600:

1. This is a grant that will be equally funded by ONR and ARPA. Here I've included ARPA's portion of the first year of funding.
2. This was written as a 3 year grant with two additional 1-year options. The funding profile is as follows: FY94 funding: 575000 from ONR; 575000 from ARPA; FY95 funding: 575000 from ONR; 575000 from ARPA; FY96 funding: 575000 from ONR; 575000 from ARPA; Option 1: FY97 funding: 575000 from ONR; 575000 from ARPA; Option 2: FY98 funding: 575000 from ONR; 575000 from ARPA.

Short Work Statement:

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

Extended Work Statement:

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

BPS:Submission,Eval,Cost/JA:Desc:

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement.

Financial Considerations:

Labor -

The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project.

The proposed labor rates are in line with standard academic or

industrial practice for research of this type.

Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

Other Direct Costs-

Other proposed direct costs (such as supplies, equipment, ADP, travel, etc.) are reasonable and necessary for accomplishing the research project.

I have reviewed and accepted the proposed budget subject to the grant/contracting officer's verification of rates in indirect costs. Where changes to the original budget were necessary I have had the principal investigator submit a revised budget through official university channels and that revised budget is enclosed. The proposal appears to be fair, reasonable, in the interest of the government, and is consistent with other previous and current efforts of this nature.

BPS:Overall Merits/JA:Contr Quals:

This effort will increase our understanding of the mechanisms of scene analysis and object recognition in biological vision.

BPS:ONR Mission/JA:Enhance Comp:

If successful, this effort will improve the Navy's capabilities in automatic target recognition and the visual control of robotic systems.

BPS:Contr Quals/JA:Noncomp Justfctn:

The proposed contractor provides the unique capabilities and experience of the principal investigator as described in the research proposal. The principal investigator would not be available through any other contractor.

BPS:PI Quals/JA:Improve Comp:

The principal investigator is highly qualified to execute the proposed program based on previous experience, publications, and presentations as described in the proposal.

1498 Technical Objective:

The objective of this MURI effort is to exploit multiple approaches to image analysis to develop novel algorithms for scene segmentation and automatic object recognition.

1498 Approach:

Algorithms will be developed exploiting novel approaches to object and background analysis, and these algorithms will be evaluated using rigorous performance characterization protocols. The approaches will be extended beyond to visible domain to include IR and LADAR imagery.

1498 Progress:

This is a new start.

Old Short Work Statement:

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

Old Extended Work Statement:

Two novel approaches to appearance-based vision will be investigated in

this Multidisciplinary CNI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

Accounting Classification

ACRN-FRC-PY-----APPN-----SUBHD-OBJ-BCN-SA--AAA---TT--PAA---COST CODE-----PE--  
a344 1994 9740400 .11EN 025 RA349 0 068342 2D A34400 R4103000C635 060110

Funds Source Title: ARP1RDDA

Source for Initialization: A.O. C635

Date Funds Expire: 30 JUN 1995

Stars Pr Number: N0001494PR24cm1

Contractor Information:  
Short Contractor Code: mryc  
UNIVERSITY OF MARYLAND  
OFFICE OF SPONSORED PROGRAMS  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

Size & Type: 1s  
Country: US  
City Code: 18750  
State Code: 24  
Duns Code: 15807172A  
DLA Milscap Code: 07439  
Payment Dodaad Code: N00179  
ACO Milscap Code: N66020  
Cognizant Audit Agency: HS03  
TIN: 520710851  
PTIN:  
Institution Code: 002103  
Use EFT: No



ADVANCED RESEARCH PROJECTS AGENCY  
3701 NORTH FAIRFAX DRIVE  
ARLINGTON, VA 22203-1714



To: Office of Naval Research

ATTN ONR 822, Wendy Magusiak

Ballston Tower One

800 North Quincy Street

Arlington, VA 22217-5660

APR 28 1995

Date: \_\_\_\_\_

AO: C635

Amendment: 00

Industrial Priority Rating: DO

Attn: Code 822

1. Performer: University of Maryland Contract No: New

Proposal Title & No: Appearance-based Vision for Complex Environments

0728

Proposal Date: 03/08/95

2. This ARPA Order provides funding in support of ARPA/ SSTO Program: MURI

Provided

Planned

Planned

Planned

Planned

FY 94

FY 96

FY 97

FY \_\_\_\_\_

FY \_\_\_\_\_

\$575,000

\$575,000

\$575,000

This Order provides FY 94 funding for 12 months of a total 36 month effort. If outyear funding is provided, it is subject to the availability of funds; therefore, a "Limitation of Funds" clause should be included in the contract.

3. Special instructions:

Joint funding: ONR: FY94 575K, FY96 575K, FY97 575K. Options: FY98 575K and FY99 575K, which will be matched in joint funding from ONR. Total contract value: \$3,450,000.

4. This order is issued under provisions of DOD Directive 7200.1 and properly chargeable to allotment(s) set forth below, the available balances of which are sufficient to cover the estimated total price. See attached distribution for financial reporting and billing instructions.

Appropriation	Limit	Supplemental Accounting Classification	ACCTG STA	Amount	Program Code	Program Element
9740400	11EN			\$575,000	4103	61103D A344 (b) (6)

These funds provided expire for obligation purposes on: 6/30/95 and can only be extended by an amendment to this ARPA Order. These funds are available

for immediate obligation

on behalf of Advanced Research Projects Agency and are only to be used for the purposes necessary to accomplish the work specified herein.

(b) (6)

Gregory Colocotronis, Comptroller

ARPA 26A

Revision 1.2

10 September 1993

(Page 1)

5. ARPA Instruction No. 21 entitled "ARPA/Agent General Requirements" is incorporated herein by reference.

6. Points of Contact: Name/Office/Telephone/Fax/E-Mail

Agent Technical: Thomas McKenna ONR 703 696-4503

Fax: 703 696-0103 mckennt@onrhq.onr.navy.mil

ARPA Technical: Oscar Firschein SSTO (703) 696-2270

Fax: (703) 696-2202 oscar@arpa.mil

ARPA Business: Neva Gartrell SSTO (703) 696-2257

Fax: (703) 696-2202 ngartrell@arpa.mil

7. A. Purpose Of Action: New Contract

B. Source Of Selection: F & OC: ONR 3594-8 MURI /94 May Announcement

C. FFRDC Ceiling: N/A

D. Tech Report Requirements: Final

E. SIRM Approval: Approval Granted

F. Security Classification: Unclassified

G. CAAS Category: N/A Object Class: N/A

H. Pre-contract Costs: N/A

8. Remarks:

Non-CAAS -- ARPA has reviewed the work to be performed under this ARPA Order Amendment and determined that it does NOT fall under the definition of "Contracted Advisory and Assistance Services" as identified under DoD Directive 4205.2.

The Federal Information Processing (FIP) resources to be acquired under the action is in direct support of this ARPA Program. A review has been conducted of the technical statements and certifications contained in the proposal, and it has been determined by the Office Director that the acquisition of the FIP resources is a necessary step in the accomplishment of the required research. The ARPA Senior IRM Representative has reviewed the supporting documentation and has granted approval for the acquisition, not to exceed \$314,340 pending non-availability certification by the Defense Logistics Agency.

ARPA REPORTING REQUIREMENTS: Only ONE copy of each report should be sent to SSTO, addressed to the program manager. Copies of these reports should NOT be sent to other ARPA offices or Defense Finance & Accounting Service (DFAS), as they are not required.

Distribution for Financial Reporting and Billing Instructions

In accordance with DoD Directive 7200.1, the Status of Allotments (Financial Report) and budget execution reports must be forwarded to:

DFAS DAO-DE AFDW/FW  
Room 1D476, The Pentagon  
Washington, D.C. 20301-1155

Copies of all obligation documents and modifications must be sent to:

Advanced Research Projects Agency  
Comptroller  
Attention: FMD  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

Fax No. (703) 696-2200

Attachments:

Joint Funding Document, Validation Letter



R & T PROJECT CODE 4203010---01 PREV R & T PROJECT CODE  
 PR SUBMISSION DATE 11 JAN 1995 DATE CONTRACT RECORD WRITTEN 11 JAN 1995  
 CONTRACT NUMBER CONTRACT MOD NUMBER  
 START DATE OF CURRENT CONTRACT 01 MAR 1995 END DATE 28 FEB 2000  
 REQUESTED START DATE 01 MAR 1995 END DATE 28 FEB 2000  
 NEGOTIATED START DATE 01 MAR 1995

CONTRACTOR NAME UNIVERSITY OF MARYLAND  
 SHORT CONTRACTOR CODE mryc SIZE AND TYPE BUSINESS CODE 1s  
 CONTRACTOR STREET COLLEGE PARK CAMPUS  
 CONTRACTOR CITY COLLEGE PARK  
 CONTRACTOR STATE MD CONTRACTOR ZIP CODE 20742  
 REP PH

PR TYPE CODE (1) ne INSTRUMENT TYPE CODE grt  
 (2) if BASIS FOR SELECTION sol  
 (3) EQUIPMENT TITLE con

BRANCH HEAD APPROVAL OF SOURCE JUST./RFP (b) (6) DATE  
 BRANCH HEAD COMMENTS ON SOURCE JUSTIFICATIONS 1/17/95

SECTION LEADER USERID SECTION LEADER CODE  
 SECTION LEADER NAME  
 DATE SECTION LEADER ASSIGNED ASSIGN WEIGHT  
 NEGOTIATOR USERID (b) (6) NEGOTIATOR CODE  
 NEGOTIATOR NAME  
 DATE NEGOTIATOR ASSIGNED  
 PREVIOUS NEGOTIATOR NAME  
 PCO USERID NAME CODE  
 S.O. NAME Hawkins ,Harold  
 S.O. USERID harold4 S.O. CODE 342

FRC	PROGRAM	YEAR	FUNDS INCREMENT	FS	DUE DATE	ACRN	CSS FUNDS
	TOTAL CUMULATIVE VALUE OF CURRENT CONTRACT						0.00
	TOTAL OBLIGATED FUNDING ON CURRENT CONTRACT						0.00
	PREV NEG INCREMENTAL FUNDS PROVIDED BY THIS PR						0.00
	NEW FUNDS BEING NEGOTIATED INTO CURRENT CONTRACT						3450000.00
	CURRENTLY NEGOTIATED NEW FUNDS PROVIDED BY THIS PR						0.00
	TOTAL EXPECTED TO BE OBLIGATED ON FUTURE ACTIONS						1150000.00
uric	1994		575000.00	a	01 MAR 1995		0.00
uric	1995		575000.00		01 DEC 1995		0.00
uric	1996		575000.00		01 DEC 1996		0.00
			0.00				0.00
			0.00				0.00
			0.00				0.00
			0.00				0.00
			0.00				0.00
			0.00				0.00
			0.00				0.00

1498 TITLE (u) Appearance-based Vision for Complex  
Systems

REPORTS FREQUENCY CODE sem

PI NAME Azriel Rosenfeld  
PI TELEPHONE (301) 405 4526 EXT

CONTRACT PROPOSAL/REQUISITION NUMBER

ONE PROPSOAL NUMBER 94442--0191

PATENTS INTEREST CODE

CLASSIFICATION DD 254

DATE OF DD 254

Notes to 600:

1. This initiates a grant that will be equally funded by ONR and ARPA. Here I've included only the ONR money because I have not yet received the ARPA money. When it comes I'll do an incremental PR.

2. This is to be written as a 3 year grant with two additional 1-year options. The funding profile is as follows: FY94 funding: 575000 from ONR; 575000 from ARPA: FY95 funding: 575000 from ONR; 575000 from ARPA: FY96 funding: 575000 from ONR; 575000 from ARPA: Option 1: FY97 funding: 575000 from ONR; 575000 from ARPA: Option 2: FY98 funding: 575000 from ONR; 575000 from ARPA

Short Work Statement:

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, featuring integrated treatment of objects and backgrounds in images. Using these approaches, algorithms will be developed for recognition of humans in action and recognition of vehicles.

Extended Work Statement:

Two novel approaches to appearance-based vision will be investigated in this Multidisciplinary URI, one featuring integrated treatment of objects, the other of backgrounds in images. Using these approaches, algorithms will be developed for two applications: recognition of humans in action and recognition of vehicles.

BPS: Submission, Eval, Cost/JA: Desc:

This proposal was received and evaluated in accordance with the DoD Multidisciplinary Research Program of the University Research Initiative announcement of 02 June 1994 published in the COMMERCE BUSINESS DAILY. Grant award is recommended based on evaluation of the proposal in accordance with the broad agency announcement.

Financial Considerations:

Labor -

The proposed quantities and types of labor (including any consultants and labor provided by subgrantee) are reasonable and necessary for accomplishing the research project.

The proposed labor rates are in line with standard academic or industrial practice for research of this type.

Any consulting at a rate in excess of \$500.00 per day is justified in the "Additional Consultant Information" text item.

#### Other Direct Costs-

Other proposed direct costs (such as supplies, equipment, ADP, travel, etc.) are reasonable and necessary for accomplishing the research project.

I have reviewed and accepted the proposed budget subject to the grant/contracting officer's verification of rates in indirect costs. Where changes to the original budget were necessary I have had the principal investigator submit a revised budget through official university channels and that revised budget is enclosed. The proposal appears to be fair, reasonable, in the interest of the government, and is consistent with other previous and current efforts of this nature.

#### BPS:Overall Merits/JA:Contr Quals:

This effort will increase our understanding of the mechanisms of scene analysis and object recognition in biological vision.

#### BPS:ONR Mission/JA:Enhance Comp:

If successful, this effort will improve the Navy's capabilities in automatic target recognition and the visual control of robotic systems.

#### BPS:Contr Quals/JA:Noncomp Justfctn:

The proposed contractor provides the unique capabilities and experience of the principal investigator as described in the research proposal. The principal investigator would not be available through any other contractor.

#### BPS:PI Quals/JA:Improve Comp:

The principal investigator is highly qualified to execute the proposed program based on previous experience, publications, and presentations as described in the proposal.

#### 1498 Technical Objective:

The objective of this MURI effort is to exploit multiple approaches to image analysis to develop novel algorithms for scene segmentation and automatic object recognition.

#### 1498 Approach:

Algorithms will be developed exploiting novel approaches to object and background analysis, and these algorithms will be evaluated using rigorous performance characterization protocols. The approaches will be extended beyond visible domain to include IR and LADAR imagery.

#### Accounting Classification

ACRN-FRC-PY-----APPN-----SUBHD-OBJ-BCN-SA---AAA---TT--PAA---COST CODE-----PE--  
uric 1994 9740400 .1104 025 RA013 0 068342 2D 61103D R1103000URIC 0601103  
Funds Source Title: UFI1RDDA  
Source for Initialization: N0001494FD001-38  
Date Funds Expire: 30 SEP 1995

Stars Pr Number: N0001494PR24cE4

Contractor Information:  
Short Contractor Code: mryc  
UNIVERSITY OF MARYLAND  
OFFICE OF SPONSORED PROGRAMS  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

Size & Type: 1s  
Country: US  
City Code: 18750  
State Code: 24  
Duns Code: 15807172A  
DLA Milscap Code: 07439  
Payment Dodaad Code: N00179  
ACD Milscap Code: N66020  
Cognizant Audit Agency: HS03  
PIN: 520710851  
PTIN:  
Institution Code: 002103  
Use EFT: No



CLEARANCE MEMORANDUM  
GRANTS WITH EDUCATIONAL AND NONPROFIT INSTITUTIONS

GRANTEE:  
UNIVERSITY OF MARYLAND  
OFFICE OF SPONSORED PROGRAMS  
COLLEGE PARK CAMPUS  
COLLEGE PARK, MD 20742

GRANT NO: N00014-95-1-0521

AUTHORITY: (X) 10 USC 2358,  
as amended, and 31 U.S.C. 6304.

1. Selection Procedure: ( ) Broad Agency Announcement  
(X) Other

This proposal was received in response to the ONR announcement of research interest published in the COMMERCE BUSINESS DAILY of 02 JUNE 1994. Award is recommended based on evaluation of the proposal in accordance with the following criteria (BPS items 1-6):

2. Proposal Identification:  
Title: Appearance-based Vision for Complex Systems

Number: 94442--0191

Date: 04 AUG 1994 As Revised:

3. Principal Investigator: Azriel Rosenfeld
4. Instrument: Domestic Research Grant
5. Description of Work: The Grantee's proposed work description is incorporated by reference.
6. Analysis of Cost/Price:  
A copy of the proposed budget is attached.

(A) The Scientific Officer has reviewed the quantities and types of labor, including consultants and subgrantee labor, and also the other direct cost items (such as travel, equipment, supplies, materials, ADP, etc.) and has determined them to be appropriate for the proposed research.

(B) The negotiator has reviewed the budget and determined that the other direct cost items are acceptable based on the following:

The Grantee and the subcontractors have provided a detailed budget and a budget justification outlining the intended use for each other direct cost category which is attached.

*2 one yr options @ \$1,150,000 each are included in the grant.*

(C) The negotiator has reviewed the proposed indirect costs as noted below:

(i) Fringe Benefit Rate: The proposed rate(s) is/are in accordance with current fixed rates or prospective forward pricing rate(s) and are correctly applied to the proper base. The acceptable rate(s) is/are:

UMD:25%

MIT:43.1%

UWA:Faculty-22%; GS-8%; Prof Staff-26%, Hrly-10%

(ii) Indirect Cost Rate: The Grantee has the proposed indirect costs which are in accordance with current policies or as prospectively agreed to until a future negotiation agreement takes effect. The rate(s) is/are correctly applied to the proper base. The acceptable rate(s) is/are:

UMD:48%

MIT: 52.%, with approved .5% increases each year.

UWA: 48.5%

#### 7. Other Negotiated Terms and Conditions:

##### New Grant:

A. Negotiated Grant Value:	\$1,725,000.00
Increment value, if applicable:	\$575,000.00
Period covered by increment:	01 MAR 1995 to 30 NOV 1995.
B. Period of Performance:	01 MAR 1995 to 28 FEB 1998.

#### 8. Certifications:

The appropriate certifications have been submitted by the Grantee and are located in the grant file.

NEGOTIATIONS CONDUCTED WITH: Evan L. Crierie

CONCLUDED ON: 20 FEB 1995 PHONE: (301) 405-6269

#### 9. Reasonableness:

In the opinion of the undersigned, the terms and conditions of this action appear to be fair, reasonable, and in the interest of the Government.

(b) (6)

Curtissa L. Coleman  
GRANT NEGOTIATOR

251 (703) 696-4516  
CODE TELEPHONE NUMBER